

The following listing of claims replaces all prior versions of the claims pending in this application:

Listing of Claims

1-80. (Canceled).

81. (Previously presented) An isolated nucleic acid molecule comprising the nucleic acid sequence:

(a)

CTGTATGTCAGCTTCCGAGACCTGGGCTGGCAGGACTGGATCATCGCGCCTG
AAGGCTACGCGCGCTACTACTGTGAGGGGGAGTGTGCCTTCCCTCTGAAGTC
CTACATGAACGCCACCAACCACGCCATCGTGCAGACGCTGGTCCACTTCATC
AACCCGGAAACGGTGCCCAAGCCCTGCTGTGCGCCACGCAGCTCAATGCCA
TCTCCGTCCTCTACTTCGATGACAGCTCCAACGTCATCCTGAAGAAATACAGA
AACATGGTGGTCCGGGCCTGTGGCTGCCACTAGCTCCT (nucleotides 16-314 of
SEQ ID NO: 42), or

(b) encoding an amino acid sequence:

LYVSFRDLGWQDWIIAPEGYAAYYCEGECAFLNSYMNATNHAIVQTLV
HFINPETVPKPCCAPTQLNAISVLYFDDSSNVILKKYRNMVVRACGCH
(SEQ ID NO: 39), or a conservative amino acid variant thereof,
wherein said nucleic acid sequence encodes a protein competent to induce bone
and cartilage in a mammal.

82. (Previously presented) The isolated nucleic acid molecule of claim 81 comprising the nucleic acid sequence

TGTAAGAAGCACGAGCTGTATGTCAGCTTCCGAGACCTGGGCTGGCAGGACT
GGATCATCGCGCCTGAAGGCTACGCGCGCTACTACTGTGAGGGGGAGTGTGC
CTTCCCTCTGAAGTCCTACATGAACGCCACCAACCACGCCATCGTGCAGACG
CTGGTCCACTTCATCAACCCGGAAACGGTGCCCAAGCCCTGCTGTGCGCCCA
CGCAGCTCAATGCCATCTCCGTCCTCTACTTCGATGACAGCTCCAACGTCATC

CTGAAGAAATACAGAAACATGGTGGTCCGGGCCTGTGGCTGCCACTAGCTCC
T (SEQ ID NO: 42),

or encoding an amino acid sequence:

CKKHELYVSFRDLGWQDWIIAPEGYAAYYCEGECAFLNSYMNATNHAIVQTL
VHFINPETVPKPCCAPTQLNAISVLYFDDSSNVILKKYRNMVVRACGCH (amino
acids 6-107 of SEQ ID NO: 9).

83. (Previously presented) The isolated nucleic acid molecule of claim 81 or 82 wherein said protein competent to induce bone and cartilage further comprises
- (a) a pair of unglycosylated polypeptide chains, each of said unglycosylated polypeptide chains having a molecular weight of about 14 kDa to 16 kDa; or
 - (b) an unglycosylated dimeric protein having a molecular weight of about 27 kDa.
84. (Previously presented) An isolated nucleic acid molecule comprising:
- (a) a first nucleic acid sequence consisting essentially of nucleotides 1-1880 of Fig. 1A (SEQ ID NO: 40), and
 - (b) a second nucleic acid sequence consisting essentially of nucleotides 1920-4842 of Fig. 1A (SEQ ID NO: 40).
85. (Previously presented) An isolated nucleic acid molecule comprising a nucleic acid sequence consisting essentially of nucleotides 34-324 of Fig. 1B (lower strand) (SEQ ID NO: 42), wherein said nucleic acid sequence encodes a protein competent to induce bone and cartilage formation in a mammal.
86. (Previously presented) An isolated nucleic acid molecule comprising a nucleic acid sequence encoding a polypeptide chain comprising the amino acid sequence VPKPCCAPT (SEQ ID NO: 27), wherein said polypeptide chain is competent to induce cartilage and bone formation in a mammal when combined with a second polypeptide chain to form a dimeric species.
87. (Previously presented) A host cell transformed with the nucleic acid molecule of any one of claims 81, 82, 84, 85, or 86.

88. (Previously presented) A host cell of claim 87 wherein said cell is a prokaryotic or eukaryotic cell.
89. (Previously presented) The host cell of claim 88, wherein said prokaryotic cell is an E.coli cell, and said eukaryotic cell is a Saccharomyces cell or a mammalian cell.
90. (Previously presented) The isolated nucleic acid molecule of any one of claims 81-86 wherein the nucleic acid is DNA.
91. (Previously presented) The host cell of any one of claims 87-89 wherein the nucleic acid is DNA.